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ABSTRACT

A study was conducted to determine whether organization of personality variables can be used to predict the attitudes of student teachers toward teaching. This followed a literature search that showed little research has been done on the personality characteristics of teachers which influence attitudes toward students. Three self-administered tests (the Population Opinionnaire [a form of the Rokeach Dogmatism Scale], the Minnesota Teacher Attitude Inventory, and the California Psychological Test) were given to 130 female seniors in home economics education who would be participating in student teaching. Findings supported the study's hypothesis that prospective student teachers with an open conceptual system have a more favorable attitude toward students than those who have a closed or dogmatic system. The nonauthoritarian individual was found to possess the characteristics of tolerance, achievement via independence, intellectual efficiency, self acceptance, flexibility, responsibility, and a sense of well-being. Since this study was limited, however, to female students in home economics during one year, a larger investigation should be undertaken (1) using both male and female students from other areas of specialization, (2) using other measurement devices, and (3) instituting a longitudinal study. The results of this study may be applied as criteria for the hiring of prospective teachers as well as for the successful selection and retention of student teacher candidates for teacher education programs. (Included at the end of this report are a bibliography and tables analyzing the test scores of study participants.) (ELG)

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ATTITUDES AND CONCEPT STRUCTURE OF HOME ECONOMICS MAJORS WITH IMPLICATIONS FOR TEACHER EDUCATION

Submitted by

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Research Project Report
Human Development, Family Life
and
Community Education Service
University of Wisconsin-Stout

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I. INTRODUCTION

With the passage of the Vocational Act of 1963 and the 1968 Amendment and the new Vocational Act of 1975, Comsumer Homemaking has become an important part of the vocational home economics program. Effective teachers are needed to implement these programs to enable individuals and families to live more satisfying lives. Attempts to seek qualified teachers and to find methods for evaluating and selecting candidates have been of concern to professional educators. With more candidates available, administrators are becoming much concerned about quality teaching. Accountability, furthermore, has become a major issue.

Importance of Attitudes of Teachers

That the attitude of the teacher toward students can influence academic achievement and personal growth of students has been recognized for some time. Attitudes are communicated to others both verbally and non-verbally. Attitudes have been variously defined. According to Allport, an attitude always has a reference (Allport, 1961). Attitudes have been called the basic unit of personality, a "set or a predisposing tendency which a person brings to the situation" (Lendersmith and Strauss, 1956). These attitudes which are a part of the personality or conceptual system of the individual thus establishes "set" of the teacher in working with students.

Lantz (1967) suggests that the existence of an association between high Minnesota Teacher Attitude Inventory scores and

education student's perception of a permissive environment encourages independence. Webb (1971) in a study of the affect of teacher sensitivity on the student states that the way a teacher behaves, not what he knows, may be the most important issue in the transmission of the teaching-learning exchange and further states that the teachers personality is a criterial variable in the classroom.

Problem of Research in Teacher Education

One of the problems of identifying the effective teacher is that of determining what qualities or characteristics such a teacher ought to possess. Getzels and Jackson state that one reason for this inconsistency is the difficulty in defining, measuring, and evaluating teacher's trait and effectiveness (Gage, 1963). Much of the research has dealt with the problem of the description of the teacher's behavior and conditions with which various teacher characteristics and behavior appear to be related. In the past fifty years such research has gone directly from predicator variables to criterion variables (Mitzel, 1960). Contradictory and negative findings and low correlations have been found to exist within and among the variables. In an attempt to reduce the list of competencies, researchers turned to new measures of proficiency in terms of pupil-teacher interaction (Anderson and Brewer, 1963, Flanders, 1961). The differential of student reaction (Gage, 1955, Wispe, 1951) and the measuring of

teacher pupil interaction have never shown any relationship to rating criteria and therefore cannot be used at the teacher education level (Flanders, 1961).

It has been suggested by Anderson and Hunka (1963) that since other research on the evaluation of teacher effectiveness has resulted in negative and insignificant correlation between variables, we might turn to the personality structure of the teacher and student teacher. Heddendorf suggests that "for some purposes it would be important to understand the personality characteristics that the student teacher brings with him to the profession. These would be more central to the core of the personality" (Heddendorf, 1971).

Croft concluded that research has indicated that certain personality characteristics of the preceiver influence his perception of other people (Croft, 1966). Secord and Bachman, after receiving the results of studies concerning authoritarianism and perceptual accuracy, have stated that "these results provide adequate evidence that the perceiver's own characteristics will affect the manner in which he perceives others (Secord, 1963). Morris (1975) in a study of student teachers states "Besides the obvious factor of academic preparation in both the area of specialization and in the educational block, an equally important contribution to teaching success comes the teachers personality." Webb (1971) indicates that the teachers personality is a variable in the classroom.

Status of Research on Perception and Open-Closed Mindedness

Despite the general assumption that one's perception and judgement of others is influenced by personal characteristics and attitudes, little research has been done on the personality of teachers which influences attitudes toward students.

Rorchio and Kearney (1956) concluded that the attitudes measured by the Minnesota Teacher Attitude Inventory are basic and deeply rooted in the personality of the teacher. According to Wakefield, the MTAI measures a dimension of tradional progressive attitudes toward education. He further states that this instrument has a practical use to discriminate teachers who have a good rapport with children and those who do not. (Wakefield, 1975).

Inferences might be drawn from studies of a more general nature. Summaries of research indicate that there are some personality qualities which appear to distinguish the more perceptive person. These characteristics include: (a) social skills and adjustment (Allport, 1961; Chance and Meaders, 1960); (b) detachment (Allport, 1961; Chance and Meaders, 1960; Taft, 1955); (c) cognitive complexity (Allport, 1961; Brown, 1965; Bieri, 1955); (d) insight (Allport, 1961;Bieri, 1955; Brunner and Tagiuri, 1954; Rokeach, 1960); and (e) intraceptiveness (Brown, 1965; Scodel and Mussen, 1953). (f) sensitivity toward students (Brenneman, 1975).

Laboratory experiments have been done on personality variables but the effect of these personality variables as they affect perception to provide a link integrating intrapersonal and interpersonal process is limited (Shrauger and Altrocchi, 1964). If these variables cannot be introjected into the laboratory, then it would seem reasonable to look to non-laboratory situations where they are already present.

Statement of Problem Area

An area of much needed study is to determine whether organization of personality variables can be useful for predicting attitudes of student teachers toward students. This study is an attempt to determine whether there is a correlation of personality characteristics as measured by the California Psychological Inventory, the Research Scale of Dogmatism and the attitudes of student teachers toward teaching as measured by the Minnesota Teacher Attitude Inventory.

II. THEORETICAL FRAMEWORK

The problem has been defined as an attempt to determine whether knowledge of the organization of personality variables can be useful in predicting of attitudes toward students. Could identification of certain conceptual systems be used as a criterion in identification and retention of teacher education candidates?

Attitudes toward others do not develop in a vacuum but within the interaction. Interpersonal perception (Bieri, 1955) has been variously called empathy, social sensitivity, and social perception. In line with a definition of social perception (Tagiuri, 1958), the term is also used to refer to the attributing of psychological characteristics (i.e., intentions, values, attitudes, and beliefs) to other people.

Factors which influence the perception of other people can be divided into three sets of variables and the interrelation among them: (1) the attributes of the stimulus person; (2) the nature of the interaction, and (3) the characteristics of the perceiver (Tagiuri, 1958). The concern here is with the characteristics of the perceiver and the ultimate attitudes he will hold.

That the same external events may be perceived differently by different people is a truism (Rokeach, 1960). Among the most influential of the multiplicity of internal or dispositional factors in determining outcomes is the nature of the subject-object ties. Individuality in these ties might be called more

properly a conceptual system (Harvey, Hunt and Schroeder, 1961), a system of ordering that serves as a mediating link between the imput of cues or information and the output or perception. The conceptual system might be viewed as a set of categorical schema through which incoming stimuli are processed as information in such a way the subject-object ties become the individual's world of reality. In this functional capacity, the conceptual system may be regarded as a system through which information is processed (Schroeder, Driver, and Streufert, 1967).

A conceptual system has both a cognitive and an affective component. As a result, the conceptual system has the possibility of mediating rational behavior and affective or preferential behavior. Behavior may be conceptualized as being imbedded in a cognitive-emtional-motivational matrix in which no true separation is possible. Furthermore, Rokeach points out that in analyzing cognitive behavior we are at the same time working with affective states since cognitive behavior has its affective counterpart. It is perception which provides the individual with both cognitive and conative feedback of his behavior.

Objective reality is also assessed through the belief-disbelief system. This belief system is conceived to represent all the sets or expectations one may have at a given time which he accepts as true to some degree. The belief-disbelief subsystem is considered to be composed of a series of sub-systems rather than a single system. These beliefs are brought to bear when

interpreting the cues observed in the stimulus person. What a particular set of stimuli means is dependent upon the belief-disbeliefs of the observer.

The individual brings to the situation his values and attitudes and his belief-disbelief system concerning reality to make sense out of the information observed. There remains the processing of the information with the conceptual equipment at the particular time. Part of this processing occurs in the perception of the stimuli from which the information is obtained, and part of the process involves organization of what is perceived according to the belief-disbelief system, as well as relating the information to the attitudes of the individual. Eventually, an inference is arrived at as result of the organization of the information about others through a process of interaction.

It would seem appropriate, in light of the above analysis, to relate dimensions of the conceptual system or personality to what is known about attitudes, variations in belief systems, and differences in approaches to information processing in order to arrive at an explanation of differences in attitudes toward students.

Attitudes and the Conceptual System

Attitudes have been variously defined by psychologists, sociologists and anthropologists. Allport distinguishes an attitude in that an attitude always has an object of reference

(Allport, 1967). An attitude gives a "set" for action. Attitudes have to do with people's orientation to definite facets of the environment including people, culture and society.

Each person has a pattern of attitude preference (Woodruff, 1952) and a matrix of concepts or a belief system (Rokeach, 1960). These act as a mediating variable between stimulus and response of the person's interacting. An individual's attitude is a part of the way he perceives reality. His conceptions are formed in terms of his attitudinal "set". How he perceives others, orders and categorizes information about them is dependent upon his attitudes.

The process of perception or the processing of information involves three stages: (1) perception of the stimuli, (2) the organization of the stimuli, and (3) the inferences or appraisal of the information taken into the conceptual system. Out of all these pieces of information individuals must select certain cues since no human is capable of attending to all the stimuli in the environment. Individuals will differ in the number, as well as what cues will be selected in perception. Differences in perception of stimuli have been attributed to: (1) set, (2) frame of reference, and (3) perceptual ability (Johnson, 1955).

Set may be defined as readiness to make a response to a specific stimuli. Getting set for the stimuli implies the ability to identify the stimuli. The perceiver does not passively assign equal priority to incoming cues but actively seeks out information which is relevant to his purpose in the interaction.

The perceiver is tuned to certain kinds of information and not others. Attitudes thus function as "set" in perception.

Either consciously or unconsciously a person may establish set. Since people are social and communicative, through the process of interaction, they prepare themselves simply because of their attitudes. Social interaction includes non-verbal communication which may give cues or information which are expressions of attitudes.

Past experiences also influence set since those events have meaning for the individual. What is perceived in his environment is then interpreted in light of these experiences. Harvey, Hunt and Schroeder (1961) imply this influence when they point out that perceiving and related activities are profoundly affected by pre-established systems of coding or perceptual placement which might be considered as set.

Research has been done on perceptual set. The response disposition of "selective sensitivity" has been demonstrated in early experiments of Postman, Bruner and McGinnies (1948). An experiment of Secord, Bevan and Katz (1956) extended the notion of perceptual accentuation. Rigid adherence to a belief system or an in-group standard predisposes an individual to rely on perceptual references in perceiving the stimuli (Rokeach, 1952). Once the individual is identified as an in-group member, the perception made may not be accurate because the in-group is accepted as the perceptual frame of reference rather than the reality of

qualities possessed by the stimulus person.

Relation of Attitudes to Qualities in the Belief System

Categories of attitudes and beliefs may be integrated or differentiated in the belief-disbelief system or remain undifferentiated. Attitudes, like beliefs, may be articulated or remain compartmentalized. Isolation-integration refers to the degree of interconnectedness between and within this system. Cognitive manifestations of isolation would be the existence of contradictory attitudes within the belief system, the degree of emphasis placed upon differences rather than similarities, or the extent to which what is relevant may be perceived as irrelevant (Rokeach, 1954).

Discrepent beliefs, attitudes, and values can also be held coexistently without awareness on the part of the individual of this discrepency. When events are threatening or contradictory, there would be denial of them. The greater the closeness, the greater the isolation and independence between the sub-systems. The greater the articulation or differentiation of attitudes and values within the system, the more internally consistent is the system with greater inner-directness of the individual. He would use internal rather than external criteria in expressing his attitudes toward others.

According to Rokeach (1954), belief systems may be organized along a central-peripheral dimension. Central beliefs represent

what might be called "primitive beliefs" which are concerned with what the person has learned about the nature of his world, the nature of "self" and "generalized other". The intermediate region represents the beliefs about the nature of authority, while the peripheral region represents the beliefs perceived to emenate from positive and negative authority. All parts must contribute to the functioning of the system but none too heavily. Attitudes and value systems which have too high a centrality disposes toward defensiveness, and a narrow latitude of acceptance of other's values and attitudes which are different from or inconsistent with the individual's own, and feelings of threat and insecurity. An optimal degree of centrality is necessary for abstract functioning.

Clearly, some stimuli, some attitudes and values will be more central than others. Witkin, et al (1954) reported that field dependent individuals were unwilling and perhaps unable to incorporate incongruent stimuli into their organizational set. Wishner (1960) demonstrated that a stimulus may be either central or peripheral, depending upon the response the subject was permitted to make. In everyday situations the individual is free to use what terms he pleases to describe the stimulus situation. Under these circumstances he may be expected to emphasize in his perception of others descriptive categories that he is accustomed to using or which reflect his own value system and attitudes. The dimensions of centrality-peripherality, clarity-ambiguity, and compartmentalization-interrelatedness might be reducible to

a single abstract dimension of belief-systems, namely, the organization of the cognitive system along an open-closed dimension (Rokeach, 1960), or an abstract-concrete dimension (Harvey, Hunt, and Schroeder, 1961).

Relationship of Attitudes to Authoritarianism in Organization of the Belief System

There is considerable evidence that authoritarian or dogmatism in conceptual systems affect how the individual perceives and organizes his world of reality. The concept of authoritarianism or dogmatism might be useful in explaining why attitudes of individuals differ.

The concept of authoritarianism has its origin in the earlier work of Fromm (1941) and Maslow (1943). However, Adorno et al (1950) have brought research on this construct to the foreground. The authoritarian individual is typified as manifesting: (1) rigidity, emotional ambivalence, intolerance of ambiguity; (2) greater tendency toward an anti-intracepetive attitude or orientation as opposed to reflective insights; (3) anti-scientific attitude based on relative inability to question rules, dogma, or principles; (4) an anti-democratic ideology (Adorno, 1950); (5) rigidity in problem solving; and (6) greater tendency toward premature closure (Rokeach, 1960).

Using Adorno's research as a point of departure, Rokeach (1960) has expanded the concept of authoritarianism to a broader one. He has brought together the constructs of systems of beliefs

and cognitive systems, making a sharp distinction between the content and structure of such a system. Conclusions that can be drawn from his work or belief systems are: (1) individuals prefer to some degree those belief systems that are more congruent with their own; (2) individuals differ in the absolute extent to which people are willing to accept or reject others on congruency of beliefs, and the relative degree of preference of those whose beliefs are similar as opposed to dissimilar; (3) for all individuals, even those whose belief system are relatively closed, the cognition of people is continuous rather than discrete; (4) the source of authority is dependent upon the centrality of beliefs and the openness to stimuli.

There appears to be a difference between dogmatic and non-dogmatic individuals in their ability to form belief systems and attitudes. According to Rokeach (1960) the variability which influences the ability to form a system of beliefs includes: (1) the ability to retain all new parts to be integrated; (2) willingness to entertain new beliefs; (3) past experiences which determine whether a system is new or not; (4) the condition of whether new beliefs to be incorporated into the existing system are presented gradually or all at once; and, (5) the degree of relatedness and integration within the belief systems.

The basic difference between authoritarianism and dogmatism seems to be in the manner in which categorization is made. The authoritarian individual tends to make black and white categories (Adorno, 1950) while the dogmatic individual categorizes in a

continuous manner along a belief-disbelief continuum from open to closed or abstract to concrete. Further, the constructs of authoritarianism are limited to the potential left while the construct of dogmatism is applicable to a general type a composing more than political intolerance.

Harvey, Hunt, and Schroeder's analysis of conceptual systems theory closely paralles the earlier work done on authoritarianism (1961). They conceptualize the self as developing through stages of differentation-interpretation process along dimensions of concreteness or abstractness.

Concreteness or Abstractness

Concreteness-abstractness is assumed to be an attribute of the concepts or patterning of stimuli, a quality of linkage between the subject-object. Among the characteristics associated with greater concreteness are: (1) absolutism and bifrucated categorical thinking; (2) attribution of external causality and oughtness of rules; (3) negativism and resistance to suggestion; (4) disposition toward ritualism with greater dependence upon external authority as possible sources of guidelines of action; (5) poor delineation between means and ends with a resiliant sterotype solution to problems; (6) poor capacity to take an "as if" attitude; and (7) intolerance of ambiguity. Thus, it would appear that persons with a concrete orientation in his conceptual system, lack of differentiation and isolation of beliefs, and attitudes would be the authoritarian or the dogmatic individual.

The non-authoritarian would have a complex and abstract conceptual system with flexibility differentiation and integration in his beliefs, values and attitudes.

The work of Barron (1957) and Bieri (1961) indicates that complexity of thinking is associated with flexibility, independence of judgement, openness to varied interpretations, and a preference for abstract thought processes. Schroeder Driver, and Streufert (1967) found that the complex individual uses many alternatives in processing information.

To summarize, the research on the authoritarian personality (Adorno, 1950; Fellows, 1966), on dogmatism (Rokeach, 1960), and on concreteness-abstractness Bieri (1961); and Harvey, Hunt, and Schroeder (1961), indicates that the authoritarian or dogmatic individual is rigid in his thinking, intolerant of ambiguity, anti-intraceptive and simplicitic in thinking maintaining a rigid value system based on authority. Authoritarians tend to rank people in a hierarchy with a tendency toward a fixed concrete, and absolute scale of values and attitudes - their own - by which they measure all people. Persons who differ in value systems or attitudes pose a threat to him as a person.

The non-authoritarian individual or the non-dogmatic person in contrast is intraceptive, has greater complexity of thinking, greater tolerance of ambiguity, and is more independent of judgment. He tends to hold a flexible, coherent value system (Maslow, 1943). The non-authoritarian judges people as individuals, being more concerned with internal cues as a basis for judgment. He

tends to recognize and respect value systems and attitudes of others that are different from his own. The non-authoritarian can handle greater complexity of stimuli. Because he is able to withhold judgment of others, he can delineate more on evidence in arriving at an inference.

Hypothesis Regarding Authoritarianism and Attitudes

It would appear that the findings of research support the position that because of their individual conceptual system, individuals differ in attitudes toward students. The following theoretical hypothesis is offered to study the relationship between the attitude prospective student teachers hold and their personality structure.

> Prospective student teachers with an open conceptual system have more favorable attitude toward students than those who have a closed conceptual system.

III. METHODS AND PROCEDURES

Previously a theory has been developed from which a research hypothesis was generated to test the relationship between organization of personality variables or conceptual systems of prospective student teachers and their attitudes toward students. If criterion for the selection and retention of candidates for professional education are to be established, then it is essential to move from the controlled laboratory situation to test hypotheses in the field. The student teaching preparatory experience appears to be a reasonable situation for field testing since there is continuous interaction between the teacher and students in and out of the classroom.

Method of Study

The field method using ex post facto experimentation was used to test the theoritical hypothesis related to conceptual systems and attitudes. In ex post facto research, the independent variable or set of variables has previously occurred. The researcher begins with the observation of the dependent variable and then proceeds to study the independent variable in retrospect to ascertain the possible relationship between the effect on the dependent variable (Kerlinger, 1965). The main weakness of this method is the lack of tight controls. It would, however, seem justifiable to use

this method since such independent variables as personality structure cannot be manipulated as in controlled experiments.

In the present study the independent variable, degree of authoritarianism or dogmatism and the measure of attitudes toward students were measured while the student were seniors in Home Economics Education. The dependent variable was also measured at this time.

Sample

The term prospective student teachers refers to those students enrolled in Student Teaching during the school year 1976. The prospective students were seniors (partly transfer students) in Home Economics education during the second quarter, fall semester and third quarter, spring semester of 1976-77. A total of one hundred thirty women participated in the study although twenty students choose not to take the test battery. Ten sets of tests had to be discarded because the data were incomplete leaving a total of ninety women in the sample. The data from the students were collected during the third week of the quarter in which the student was enrolled.

Variables

In this study the independent variable has been identified as authoritarianism in personality structure as measured

by the California Psychological Inventory and the Rokeach test of Dogmatism. The dependent variable has been identified as attitudes of prospective student teachers as measured by the Minnesota Teacher Attitude Inventory. These variables have been identified according to a theoretical definition in the precluding section. Further operational definitions with a discussion of these variables will be presented in this section.

Authoritarianism or Closed Mindedness

As defined by Adorno (1950) authoritarianism is a "general disposition to glorify, to be subservient to, and remain uncritical toward authoritarian figures in the in-group and to take an attitude of punishing out-group figures in the name of some moral authority" (Adorno, 1950, p. 328). The individual who is said to be authoritarian manifest: (1) rigidity, intolerance of ambiguity and dogmatic in nature; (2) greater tendency toward anti-intraceptiveness as opposed to reflective insight; (3) an antiscientific attitude based on inability to question rules, dogma, or principles; and (4) an anti-democratic ideology (Adorno, 1950). Authoritarianism as originally defined, is not a structural concept. A broader interpretation to include Rokeach's (1960) concept of dogmatism was used in the present study. As he points out the original theory fails to differentiate between conservatism and simplicity of structure and often does not identify the authoritarian liberals. The work of Harvey,

Hunt and Schroeder (1961) has further extended the concept of the open and close mindedness of a belief-disbelief or a conceptual system, a way of processing information which is a part of the total personality. Multiple measures were used since each instrument measured different aspects of the variable. Two devices, the California Psychological Inventory and the Rokeach Scale of Dogmatism, were administered to the total sample. These devices are among the more frequently used measures of open-closed mindedness or dogmatism. Each device will be discussed in some detail.

Rokeach Dogmatism Scale

The first measure of authoritarianism or closed-mindedness was the Dogmatism Scale (Rokeach, 1960). The primary purpose of the scale is to measure individual differences in openness or closedness of the belief system. Because of the way in which Rokeach has defined openness and closedness of the belief system, the Scale should measure general authoritarianism and general intolerance. The open and closed mind are differentiated as follows: --with respect to the organization of the belief-disbelief continuum:

> A system is defined to be closed to the extent that there is a high magnitude of rejection of all disbelief subsystems, an isolation of beliefs, a high discrepancy in degree of differentiation between belief and disbelief systems, and little differentiation within the disbelief system ..... isolation is ..... a defining characteristic of openness-closedness. (p.61)

--with respect to the central-peripheral dimension:

> We assume that the more closed the system, the more the world would be seen as threatening, the greater will be the

> belief in absolute authority, the more other persons will be evaluated according to the authorities they line up with, and the more will peripheral beliefs be related to each other by virtue of their common origin in authority, rather than by virtue of intrinsic connections ..... the relatively closed person becomes highly attuned to irrelevant internal and external pressures and, accordingly unable to evaluate information independent of the source.....In the closed system, the power of authority does not depend upon cognitive correctness, but on the ability of authority to mete out reward and punishment. (pp. 62-63)

--with respect to the time-perspective dimension:

> ..... in closed systems, the main cognitive basis is missing from the distinction between the immediate and remote future. Knowledge about the remote future is impossible to refute and, hence, one can be safely preoccupied with it. The more open the system, the more the immediate future should be in the service of confirming or not confirming predictions about the present. (p. 64) (Rokeach, 1960).

The Dogmatism Scale went through five revisions, details of which are reported elsewhere (Rokeach, 1960). Form D Scale consists of 40 items. The form administered, Population Opinionnaire was developed by Sedgewick (University of Wisconsin-Stout) to conceal items measuring dogmatism with other test items. The test is usually scored with agreement or disagreement with each item to a fine point scale ranging from plus one to minus one with the zero point excluded in order to force choice in one direction or the other. The scale is subsequently concerted to an item score by adding a constant factor of four to each of the scale values. A high score (agreement) indicates the dogmatic or closed minded individual, while the low score (disagreement) is purported to be representative of the non-dogmatic, the open minded, or non-authoritarian.

The sample form on which reliability data were originally obtained was from three different areas of social climate. The Form E Scale was found to have a reliability coefficient with a range of .68 to .93. These coefficients are considered to be satisfactory (Rokeach, 1960).

The author appears to rely heavily on two studies with high and low dogmatic groups to establish construct validity for the scale. The method of known groups was used in the two studies. In the first study a statistically significant difference was found between the high dogmatic group who appears to be "high authoritarians" and the low group or "right anti-authoritarians," (Rokeach, 1960). The second study yielded a high correlation between the Dogmatism scale and the F scale with a range on the seven subscales from .54 to .74.

California Psychological Inventory

The California Psychological Inventory has been concerned with characteristics of personality which has a wide applicability to human behavior and are related to the positive aspects of personality rather than the pathological aspects. The CPI as it will be referred to in following discussion is composed of 480 items and yields 18 standard scores. Its scales are addressed principally to personality characteristics important for social being.

Each CPI scale is intended to cover one important aspect of interpersonal relationships while the total set provides a com-

prehensive survey by categories (Gough, 1969) as follows:

Class I. Measures of Poise, Ascendancy, Self-Assurance and Interpersonal Adequacy

1. Do Dominance - to assess factors of leadership ability, dominance, persistence, and social initiative.

2. Cs Capacity for Status - measures the personal qualities and attributes which underlie and lead to status.

3. Sy sociability- to identify outgoing, participative temperament.

4. Sp Social Presence - to assess poise, spontaneity, and self confidence.

5. Sa Self-Acceptance - to assess self-acceptance, and capacity for independent thinking and action.

6. Wb Sense of Well-Being - to identify persons free from self-doubt.

Class II. Measures of Socialization, Maturity, Responsibility, and Intrapersonal Structuring of Values

7. Re Responsibility - to identify responsible, and dependable temperament.

8. So Socialization - to indicate the degree of social maturity and integrity.

9. Sc Self-Control - to assess adequacy of self-regulation and self-control and freedom from impulsivity and self-centeredness.

10. To Tolerance - to identify persons with permissive, accepting, and non-judgmental social beliefs and attitude.

11. Gi Good Impression - to identify persons who are concerned about how others react to them.

12. Cm Communality - to indicate reactions and responses corresponding to the modal pattern.

Class III. Measures of Achievement Potential and Intellectual Efficiency

13. Ac Achievement Via Conformance - to identify those

factors which facilitate where conformance is a positive behavior.

14. Ai Achievement Via Independence - to identify interest and motivation which facilitate achievement in any setting where autonomy and independence are positive behaviors.

15. Ie Intellectual Efficiency - to indicate the degree of personal and intellectual efficiency.

Class IV. Measures of Intellectual and Interest Modes

16. Py Psychological-Mindedness - to measure the degree to which the individual is interested in, and responsive to, the inner needs, motives, and experiences of others.

17. Fx Flexibility - to indicate the degree of flexibility and adaptability of a person's thinking and social behavior.

18. Fe Femininity - to assess the measculinity or femininity of interests.

The CPI is self-administering. The inventory has been used in research testing with groups ages 12 and 13 through ages 68 and 70. No vigorous conditions need be established in order to achieve valid and reliable test results (Gough, 1969). The inventory has been tried under both formal and informal conditions including "take home plan" as was used in this study. Insofar as could be determined the accuracy of the profiles observed and from indicators in the test of reliability and dependability, satisfactory results were the rule.

Norms for the CPI were developed from consolidation of available samples into a single composite sample for each sex. Standard scores for females are based on 7,000 cases.

Following the scoring of the test, a profile was than drawn for each prospective student teacher. The test results were inter-

preted in an individual conference by a member of the Graduate Practicum in Clinical Psychology. Each graduate student had been trained by Dr. Evelyn Rimel to insure accuracy of interpretation. Each student had the privilege of refusing such an interview.

While there is some interaction between scales of the CPI, for this particular study this interaction may be helpful.

Burger's (1975) study of the feasibility of estimating the major CPI factors directly from CPI scale scores to determine whether such estimates of factor scores could be used to formulate personality types. He concluded that the study indicated that there is no need to rely upon specially scored factor scales to estimate the two major CPI factors because selected CPI scales themselves can be used for such purposes with a high degree of accuracy.

After studying the results of other reported studies on the CPI, Cries (1964) drew three basic conclusions: (1) in all the studies, the factorial structure appears to be essentially the males and females, (2) due to item overlap and statistical intercorrelations it is not necessary to use all of the scales to measure the traits they supposedly define, and (3) with only slight inconsisten cries due to difference in methods of analyses, factor anaylses have yielded almost identical grouping of CPI scales. A factor study of Nichols and Schnue (1963) showed factor groupings similar to the other studies. The study of Mitchell and Pierce-Jones (1960)support the four scale classes though they are slightly different from those identified by Gough.

Two reliability studies were used. In general the consistency of measurement is high enough to use it for both group and individual testing (Gough, 1969). The validity of the scales was drawn from evidence drawn from cross-validational studies of the inventory. It appears that the California Psychological Inventory has a reliability and validity coefficient high enough to be useful for research purposes.

Attitudes of Prospective Student Teachers

The Minnesota Teacher Attitude Inventory was developed from research carried out by Cook, Leids, and Collis (1951) which indicated the attitudes of teachers toward children could be measured with high reliability. The MTAI was designed to measure those attitudes of a teacher which predicted how well he will get along with pupils in interpersonal relationships and indirectly how well satisfied he will be with teaching as a vocation. The most direct use of the MTAI is the selection of students for teacher preparation and the selection of teachers for teaching positions.

It is assumed that teachers ranking at the high end of the scale should be able to maintain a state of harmonious relationships with his pupils characterized by mutual affection and sympathetic understanding. The teacher and pupils would work together in an atmosphere of cooperative endeavor with a feeling of security growing from a permissive atmosphere of freedom to think, act, and speak one's mind with mutual respect for the feelings, rights, and abilities of others. Inadequacies and shortcoming in both teacher and student

should be admitted frankly as something to overcome. Abilities and strengths would be recognized and used to the utmost benefit of the group. At the other end of the scale is the teacher who attempts to dominate the classroom. He may be successful and rule with an iron hand, or he may be unsuccessful and become fearful and distraught in a classroom characterized by frustration, restlessness, inattentiveness, and lack of respect with many disiplinary problems. There is a feeling of mutual distrust and hostility. The teacher tends to think in terms of his status, the correctness of the position he takes in classroom matters.

Although it would be over-simplification of the problem to assume the difference between teachers at the two ends of the scale can be completely explained in terms of attitudes toward children, it can be assumed that the attitudes of a teacher are the result of interaction of a multitude of factors. Therefore, attitudes afford a key to prediction of the social atmosphere a teacher will maintain in the classroom.

The Minnesota Teacher Attitude Inventory is a group test which is self-administering with no time limit for the test period. Each subject is instructed to use his own interpretation of items according to his own understanding of items. The range of the test scores on the MTAI is from a plus 150 to a minus 150.

Validity of the experimental from known as Form X-164 was determined by administering the inventory to a sample of 100 grade teachers and correlating their scores with three outside criteria of teacher-pupil rapport. The results of these criteria

ratings, which yielded a reliability coefficient of .93, .87, and .92, were then correlated with the scores made by 100 randomly selected teachers on the MTAI. This yielded a validity coefficient of .60. The reliability of Form X-164 as determined for the random group by the Spearman Brown split-half procedure was found to be .89.

Of the 150 items in Form A which was the one administered, 127 items were taken from the Form X-164. Two further validation studies were done. Similar validity and reliability coefficient resulted, which appear to be acceptable.

Two major criticisms of the MTAI have been made as a result of various studies. Leavitt and Stone (1957) recognized that the MTAI like the F Scale, is "loaded with acquistion set" but argued that acquiescence itself may belong to the family of "authoritarian" or "conformity" dispositions. If this is correct, then the agree-disagree format and high loading with negative items of the F Scale and MTAI made a positive contribution to the validity of these instruments. The second charge is that of fakability. Stein and Hardy (1957) concluded that rather than faking, the test is adquate in revealing biased or prejudicial attitudes toward children.

Wakefield (1976) states that the MTAI measures a dimension of tradional to progressive attitudes toward education and further suggests " a practical use of the MTAI is to discriminate teachers who have good rapport with children from those who do not." Yee and FRUCHTER (1971) found that the MTAI is heavily loaded with items sampling the tradional life view.

It would appear that the Minnesota Teacher Attitude Inventory

is a valid, reliable test to measure the dependent variable, attitudes of prospect student teachers toward students.

Procedures

All of the devices were administered at the end of the third week during the first semester, 1976 and the third week of the second semester, spring 1977 to the Home Economics Educations students who would be doing student teaching. Since the tests were self administering with no time limit, the Minnesota Teacher Attitude Inventory, the Population Opinionaire and the California Psychological Test were placed in an envelope with the answer sheets attached to the correct test, a soft lead pencil and a short note about the research study.

Before the test was administered, the investigator asked the cooperation of the class members. On the day the tests were handed out, she again went to the class, had each student check the packet to determine that it was complete and to answer any questions they might have. The students were instructed to return all of the materials in the same envelope on which the code number for the student had been placed at the investigators office, five days later.

At the time the devices were given out, the students were told about the purpose of the research study and reassured that the tests would in no way affect their grade in the course or continuation in the program. They were also told that they would have the

opportunity to have the results of the California Psychological Test interpreted for them by an advanced graduate student in Counseling and Guidance Practicum. However, they were free to decline the opportunity. Six students could not be contacted. Three refused the interpretation session. They were also given an opportunity for peer counseling if they so desired. A large number indicated an interest but a follow up of the individuals who availed themselves was not made.

After the tests for each test were scored, the scores were put in rank order from high to low. For the frequency tables please refer to the Appendix.

Statistical Tests and Statement of the Hypothesis

The statistical test used in testing the null hypothesis was the Pearson Product Moment Correlation. The mean and standard deviation for each device and for each subcategory of the California Psychological Test was also computed.

The justification of using the Pearson Product Moment Correlation and the Analysis of Variance was that this was a pilot study to determine whether the use of any psychological or attitude test might be justified in the future as a means of selection and retention of students in the Home Economic Education program. A .05 level of significance was to be considered as the point of rejection for the null hypothesis.

To test the significance of the correlation between the two measures of the independent variable and the dependent variable the theoretical hypothesis was stated as a null hypothesis as follows:

> There will be no significant difference between prospective student teachers who have a closed conceptual system and those students who have a non-authoritarian or open minded conceptual system with respect to their attitude toward students.
>
> a. There will be no significent difference between attitudes of student teachers as measured by the Minnesota Teachers Attitude Inventory and Certain personality characteristics as measured by the California Psychological Inventory which include (1) Do, Dominance (2) Capacity for Status, (3) Sy Sorability, (4) Sp Social Presence, (5) Sa Self Acceptance, (6) Wb Sense of Well-being, (7) Re Responsibility, (8) So Socialization, (9) Sc Self-Control, (10) To Tolorance, (14) Ai Achievement via Independence, (15) IE Intellectual Efficiency, (16) Psychological-mindness, and (17), Fx Flexibility.

IV. FINDINGS AND DISCUSSION

In this section findings will be reported which are relevant to the hypothesis of the relationship between authoritarianism or closed mindedness and attitudes towards students.

The findings of the study appear to support the theory of authoritarianism or closed conceptual systems as presented in part II.

A one way analysis of Variance were the statistical technique used to test the difference in scores according to the degree of open or closed conceptual systems as measured by the Population Opinionaire and California Psychological Test and the attitudes of prospective student teachers as measured by the Minnesota Teacher Attitude Inventory. A Scheffe test was run on the three groups to determine where the real signifiance existed. It must be emphasized that the ex post facto method was used which made control of variables more difficult.

Since multiple measures were used, a separate analysis of Variance and Pearson was computed for the Population Opinionaire and for each scale of the CPI since each scale measured different personality components.

As may be noted in Table I there is a negative correlation of -0.154 between the Minnesota Teacher Attitude Inventory and the Population Opinionaire. This approaches statistical significance at the .05 level. A negative correlation should be expected since the higher the score on the Population Opinionaire, the more closed minded or authoritarian is the individual.

When individual's whose scores range from 156 to 214 (see Table 4, AppendixA) on the Population Opinionaire commonly considered as closed minded (Rokeach 1961), (Borgers and Ward, 1974) and scores from 97 to 126 considered as open minded are examined for the prospective students at the University of Wisconsin-Stout it may be noted that a total of 56 students can be classified as having closed conceptual systems or an authoritarian while 40 students can be classified as open minded. (See Appendix A, Table 4). The mean score for the group is 144.9 with a standard deviation of 29.25. There are 36 scores between the mean and the highest score for open mindedness and 25 scores between the mean and the lowest of the scores of the close minded group. The total range of scores is 159 points. It appears that the group of students in the sample tended to be closed minded which could be a factor in the statistical findings.

On further examination of Table I it may be noted that for the California Psychological Inventory correlations significant at the .01 level were found for the scales capacity or status, Sociability, social presence, sense of well being, measuring tolerance, achievement via independence, intellectual efficiency, and psychological mindedness. Correlations statistically significant at the .05 were found for scales measuring dominance, social acceptance, socialization, achievement via conformity flexability while the correlation for self control approached the .05 level of significance.

The norms (see Table 2) for the scales of the California Psychological Test for the University of Wisconsin-Stout sample were very close to the national norms (Gough, 1967). Further examination of Table 3 does not indicate any large standard deviations from the mean on any of the CPI scales. Therefore it appears reasonable to assume that these correlations do indeed appear to support the theoretical hypothesis that prospective student teachers with an open conceptual system have more favorable attitudes toward students than those who have a closed conceptual system.

The low correlations on certain of the CPI scales (See Table 1) would be characteristic of the authoritarian individual as described by Adorno (1950), Rokeach (1960) and Harvey, Hunt, and Schroeder (1961) which is discussed in the second section. These California Personality Inventory scales include the following: dominance (0.02), capacity for status (0.45), socialibility (0.36), social presence (0.48), good impression (0.197), and achievement via conformity (0.359). These scales are discussed in some detail in section III under the presentation of the device. The low correlations between the Minnesota Teacher Attitude Inventory and these CPI scales are consistent with characteristic of an authoritarian individual or a closed conceptual system. These include: (1) rigidity, emotional ambivalence, intolerance of ambiguity; (2) greater tendency toward an anti-intraceptive attitude as opposed to reflective insights; (3) anti-intraceptive

attitude based on relative inability to question rules; (4) rigidity in problem solving (Adorno, 1960); (5) greater tendency toward premature closure; (6) preference for individuals with congruent belief systems; (7) dependency upon source of authority in openness to stimuli; (8) extent of acceptance of new ideas (Rokeach, 1960); (9) degree of concreteness; (10) absolutism and categorical thinking; (11) resistance to suggestions; (12) dependence upon authority as guidlines for action; (13) stereotype solutions to problems; and (14) intolerance of ambiguity (Harvey, Hunt, and Schroeder, 1961).

On the other hand high correlations between the Minnesota Teacher Attitude Inventory Scores and the scores on certain of the CPI would indicate the non authoritarian individual or the open conceptual system to support the theory. These scales include tolerance (0.338), achievement via independence (0.402), intellectual efficiency (0.319), self acceptance (0.224) psychological mindedness (0.389), flexibility (0.189), responsibility (0.165), and sense of well being (0.357). The flexability self acceptance scales reached a .05 level of significance while the correlations for the other scales reached the .01 level of significance. These measures are consistent with the characteristics of the non-authority individual. This individual with the open conceptual system has greater complexity of thinking, greater tolerance of ambiguity, and is more independent in judgment. He tends to hold a flexible, coherent value system (Maslow, 1943). The nonauthoritarian judges people as individuals, being more concerned with internal cues as a basis

for judgment. He tends to recognize and respect value systems and attitudes of others that are different from his own. The open minded individual can handle greater complexity of stimuli. Because he is able to withhold judgment of others, he can delineate more on evidence in arriving at an inference.

An analysis of Variance was used in addition to the Pearson Product Moment Correlation since their appeared to be a possibility that some of the significant correlations might be due to chance. It was found that the level of signifance changed from the .01 level of significance to the .05 level for the Tolerance and Intellectual Efficiency Scales. (See appendix Tables 25-40) These two scales still came within the .05 level of signifance which had been selected as the level of rejection of the null hypothesis.

When the Scheffe Post-hoc Comparison of the three group (high medium and low) in all instances the mean of the high group was significantly greater than the mean of the low group. When all of the scales were treated as one scale as suggested by Burger (1975), Cries (1964) and Mitchell and Pierce (1960) a.01 level of signifiance was reached. However, the theory supporting the use of the separate scales as a measure of characteristics of the open (non-authoritarian) and closed minded (authoritarian) would appear to be inconsistent to the use of the total scale as a single measure without the use of the sub scales.

A decision was made to reject the null hypothesis:

There is no significant difference between prospective student teachers who have closed conceptual systems and those perspective students who have a non-authoritarian or open minded conceptual system with respect to their attitude toward students.

V. CONCLUSIONS AND RECOMMENDATIONS

Thus it appears there is support for the theory presented in section II to warrant further research on the personality structure of prospective students as a basis for selection of students for a teacher education program. The present study was considered a replication of a pilot study in which similar results were found:

Limitation of the Study

The generalizations which have been drawn from this study are limited in nature since the sample consisted of femalestudents in Home Economics Education only. The sample was not a random sample but a purposive selected sample according to their attitudes toward students as measured by the Minnesota Teachers Attitude Inventory. Extraneous variables could not be controlled for in this study since the ex post fact method was used.

Recommendations for Further Study

Since the findings appear to support the proposition of the relationship between personality variables of open or closed minded prospective student teachers, and because it was a replication of a pilot study, it is recommended that the sample might be increased to include male and females from other areas of specialization in teacher education at Stout such as Industrial Education, Early Childhood Education, Distributive Education and Art Education as

well as other Universities.

Some other device such as the Omnibus Personality Scale might be used although the California Psychological Scale appears to have been adequate for this study.

Although there was evidence to support the theory through the use of statistical techniques, the Pearson Product Moment Correlation, and a more sophisticated statistical technique, an analysis of variance with an Scheffe comparison made between the mean of the high and low groups, and the middle group use of the two techniques appeared to be warranted. It is possible that the use of a two way analysis of variance would make it possible to maximize the independent variable.

Further study might take into consideration whether certain types of programs or certain teaching methods used in the teacher education program might assist students in developing a more open minded conceptual system. The results of the pilot study and the replication study ought to be compared.

A longitudinal study of the same prospective teachers might be done following these same students through their first year of actual teaching. A second longitudinal study might be one done for the freshman class of 1977-78 and a comparison made of the three groups.

Implications of the Study

The approach of the study of the conceptual system of prospective student teachers appears to be a fruitful one in identifying prospective student teachers for the selection of, preparation and

retention of students in the program. This study could also have implications for the selection of prospective candidates by the employer. This same approach might be used in the selection of Cooperating Teachers. With an open conceptual system, a strong cognitive need to know, the cooperating teachers might possibly be more effective in helping student teachers grow and develop more favorable attitudes.

Summary

Among the concerns of teacher educators has been the selection and retention of students in the student teaching programs. Because many other approaches to such research has produced insignificant or conflicting data, it has been suggested that the conceptual system of the prospective student teacher might be used in the replication study of Home Economics Education Seniors at the University of Wisconsin-Stout. A theoritical hypothesis was generated from research studies of open or closed conceptual systems or authoritarian individuals. The null hypothesis was tested by means of the Pearson Product Moment Correlation and a one way analysis of variance with a Scheffe Post-hoc comparison of the high, medium and low group. Because the correlations between a number of the scales on the California Psychological Test and the Minnesota Teacher Attitude Inventory were sifnificant at the .01 level of significance or in some instance at the .05 level and because the correlation with the Population Opinionaire closely approached the .05 level of significance, the null hypothesis was not rejected. It appears that studying the con-

ceptual system of prospective student teacher may prove to be a fruitful method for the selection and retention of student teacher candidates for teacher education programs.

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APPENDIX

Table I

Correlation Between Minnesota Teacher Attitude Inventory and Measures of Authoritarianism

Population Opinionaire		-0.154**
California Psychological Inventory		
	Level of Sequence	Correlation
Dominance (Do)	.05	0.21
Status (Cs)	.01	0.45
Sociability (Sy)	.01	0.359
Social Presence (Sp)	.01	0.475
Social Acceptance (Sa)	.05	0.224
Sense of Well Being	.01	0.359
Responsibility	.05	0.181
Socialization	.05	0.005
Self Control	.05	.113
Tolerance	.01	.338
Good Impression	.05	.197
Communality	.05	.047
Achievement via Conformity	.05	.093
Achievement via Independence	.01	.402
Intellectual Efficiency	.01	.319
Psychological Mindedness	.01	.389
Flexibility	.05	.189
Femininity	.05	.106

DF = 89
P = $>$.05 = .197 .01 = .319

Table 2

Comparison of National Norms on the California Psychological Inventory and University of Wisconsin-Stout Students

	University of Wisconsin Stout	National
Dominance	29.4	28.5
Status	19.2	22.5
Sociability	26.1	26
Social Presence	37.1	37
Self Acceptance	22.3	19
Sense of Well Being	35.5	37.5
Responsibility	29.9	33.0
Socialization	39.8	40.0
Self Control	28.6	31.0
Tolerance	22.2	25.0
Good Impression	16.3	19.0
Communality	26.2	26.0
Achievement via Conformity	28.2	29.0
Achievement via Independence	20.7	21.05
Intellectual Efficiency	37.7	41.0
Psychological Mindedness	11.37	12.0
Flexibility	10.6	12.0
Femininity	23.8	23.0

Table 3

Mean and Standard Deviation for Dependent and Independent Variables

	Mean	S.D.
MTAI	33.0	29.85
Population Opinionaire	144.9	29.85
California Psychological Inventory Scale		
Dominance (Do)	29.4	6.2
Status (Cs)	19.2	3.37
Sociability (Sy)	26.1	4.44
Social Presence	37.1	4.77
Self Acceptance	22.8	3.3
Sense of Well Being	35.5	4.33
Responsibility	29.9	4.5
Socialization	39.1	4.70
Self Control	28.5	6.17
Tolerance	22.0	4.34
Good Impression	16.24	5.55
Communality	26.1	1.87
Achievement via Conformity	28.22	4.04
Achievement via Independence	20.72	4.12
Intellectual Efficiency	37.7	5.43
Psychological Mindedness	11.37	2.42
Flexibility	10.6	4.09
Femininity	23.75	3.97

Table 4

Frequency Distribution of Scores for Population Opinionaire (Rokeach Dogmatism Test)

214 - 1	173 - 4	151 - 3	129 - 1	107 - 1
... - 0	172 - 2	150 - 2	128 - 0	106 - 2
201 - 1	171 - 1	149 - 3	127 - 2	105 - 2
... - 0	170 - 1	148 - 1	126 - 3	104 - 0
198 - 1	169 - 3	147 - 2	125 - 1	103 - 0
... - 0	168 - 0	146 - 3	124 - 4	102 - 0
192 - 1	167 - 3	145 - 0	123 - 1	101 - 0
... - 0	166 - 2	144 - 2	122 - 1	100 - 0
189 - 2	165 - 1	143 - 5	121 - 2	99 - 0
188 - 1	164 - 5	142 - 1	120 - 2	98 - 0
... - 0	163 - 2	141 - 0	119 - 1	97 - 0
185 - 1	162 - 1	140 - 3	118 - 3	96 - 0
... - 0	161 - 4	139 - 5	117 - 2	95 - 0
183 - 1	160 - 1	138 - 4	116 - 1	94 - 0
... - 0	159 - 0	137 - 2	115 - 0	93 - 1
180 - 1	158 - 1	136 - 4	114 - 3	92 - 1
179 - 0	157 - 5	135 - 1	113 - 0	... - 0
178 - 1	156 - 3	134 - 2	112 - 1	55 - 1
177 - 2	155 - 3	133 - 3	111 - 0	... - 0
176 - 4	154 - 4	132 - 0	110 - 3	
175 - 1	153 - 3	131 - 2	109 - 3	
174 - 0	152 - 1	130 - 1	108 - 1	

$\bar{X}$ = 144.9 S.D. = 29.85 N = 90

Table 5

Frequency Distribution of Scores for California Psychological Test - Dominance Scale

	51 - 1	24 - 8
	... - 0	23 - 3
	39 - 4	22 - 3
	38 - 2	21 - 3
	37 - 4	20 - 3
	36 - 5	19 - 3
	35 - 10	18 - 5
	34 - 13	17 - 1
	33 - 7	16 - 2
	32 - 11	15 - 2
	31 - 11	14 - 2
	30 - 6	13 - 1
	29 - 12	12 - 1
	28 - 9	11 - 0
	27 - 8	10 - 0
	26 - 8	9 - 0
	25 - 10	8 - 1
$\bar{X}$ = 29.4	S.D. = 6.2	N = 90

Table 6

Frequency Distribution of Scores on California Psychological Test - Capacity for Status

	27 - 2	14 - 6
	26 - 4	13 - 1
	25 - 5	12 - 4
	24 - 13	11 - 2
	23 - 16	10 - 0
	22 - 13	9 - 3
	21 - 10	8 - 0
	20 - 14	7 - 0
	19 - 15	6 - 1
	18 - 10	5 - 1
	17 - 18	4 - 0
	16 - 12	3 - 0
	15 - 10	... - 0
$\bar{X}$ = 19.2	S.D. = 3.37	N = 90

Table 7

Frequency Distribution of Scores on California Psychological Test - Sociability Scale

	35 - 1	21 - 7
	34 - 2	20 - 6
	33 - 7	19 - 8
	32 - 11	18 - 1
	31 - 7	17 - 3
	30 - 13	16 - 2
	29 - 14	15 - 2
	28 - 12	14 - 0
	27 - 10	13 - 0
	26 - 10	12 - 4
	25 - 17	11 - 1
	24 - 7	10 - 0
	23 - 6	9 - 1
	22 - 8	
$\bar{X}$ = 26.1	S.D. = 4.44	N = 90

Table 8

Frequency Distribution of Scores on California Psychological Test - Social Presence Scale

	53 - 1	34 - 10
	52 - 0	33 - 8
	51 - 2	32 - 7
	50 - 1	31 - 11
	49 - 0	30 - 6
	48 - 0	29 - 6
	47 - 3	28 - 3
	46 - 3	27 - 4
	45 - 0	26 - 3
	44 - 3	25 - 0
	43 - 4	24 - 1
	42 - 9	23 - 1
	41 - 10	22 - 1
	40 - 10	21 - 0
	39 - 10	20 - 0
	38 - 11	19 - 2
	37 - 4	18 - 0
	36 - 16	17 - 1
	35 - 8	
$\bar{X}$ = 7.1	S.D. = 4.77	N = 90

Table 9

Frequency Distribution of Scores on California Psychological Test - Social Acceptance Scale

29	4
28	4
27	10
26	14
25	15
24	19
23	11
22	19
21	11
20	19
19	10
18	6
17	5
16	7
15	4
14	1
13	1
...	0
1	0

$\overline{X}$ = 22.8 S.D. = 3.3 N = 90

Table 10

Frequency Distribution of Scores on California Psychological Test - Sense of Well Being Scale

	42 - 8	28 - 2
	41 - 5	27 - 4
	40 - 20	26 - 5
	39 - 10	25 - 2
	38 - 14	24 - 1
	37 - 18	23 - 1
	26 - 12	22 - 1
	35 - 12	... - 0
	34 - 10	13 - 1
	33 - 10	12 - 0
	32 - 6	11 - 0
	31 - 8	10 - 1
	30 - 6	... - 0
	29 - 2	
$\bar{X}$ = 35.5	S.D. = 4.33	N = 90

Table 11

Frequency Distribution of Scores on California Psychological Test - Responsibility Scale

	40 - 1	28 - 6
	39 - 2	27 - 11
	38 - 1	26 - 11
	37 - 2	25 - 5
	36 - 9	24 - 4
	35 - 11	23 - 7
	34 - 11	22 - 3
	33 - 14	21 - 2
	32 - 20	20 - 3
	31 - 14	... - 0
	30 - 14	9 - 1
	29 - 8	... - 0
$\bar{X}$ = 29.9	S.D. = 4.5	N = 90

Table 12

Frequency Distribution of Scores on California Psychological Test - Socialization Scale

	48 - 6	33 - 8
	47 - 3	32 - 4
	46 - 9	31 - 4
	45 - 3	30 - 2
	44 - 12	29 - 3
	43 - 14	28 - 1
	42 - 12	27 - 2
	41 - 10	26 - 1
	40 - 9	25 - 0
	39 - 13	24 - 1
	38 - 13	23 - 1
	37 - 8	22 - 0
	36 - 6	... - 0
	35 - 7	16 - 1
	34 - 6	... - 0
$\bar{X}$ = 39.0	S.D. = 4.70	N = 90

Table 13

Frequency Distribution of Scores on California Psychological Test - Self Control Scale

	45 - 1	26 - 2
	44 - 1	25 - 9
	43 - 0	24 - 5
	42 - 0	23 - 6
	41 - 5	22 - 5
	40 - 3	21 - 2
	39 - 3	20 - 5
	38 - 4	19 - 4
	37 - 4	18 - 3
	36 - 2	17 - 2
	35 - 7	16 - 5
	34 - 5	15 - 2
	33 - 4	14 - 5
	32 - 7	13 - 0
	31 - 9	12 - 1
	30 - 9	11 - 3
	29 - 14	10 - 0
	28 - 10	9 - 1
	27 - 11	8 - ...
$\bar{X}$ = 28.5	S.D. = 6.17	N = 90

Table 14

Frequency Distribution of Scores on California Psychological Test - Tolerance Scale

	31 - 1	15 - 5
	30 - 1	14 - 5
	29 - 2	13 - 8
	28 - 2	12 - 2
	27 - 7	11 - 3
	26 - 13	10 - 2
	25 - 11	9 - 2
	24 - 10	8 - 1
	23 - 11	7 - 0
	22 - 18	6 - 0
	21 - 10	5 - 0
	20 - 13	4 - 1
	19 - 13	3 - 0
	18 - 5	2 - 1
	17 - 7	1 - 0
	16 - 6	
$\bar{X}$ = 22.0	S.D. = 4.34	N = 90

Table 15

Frequency Distribution of Scores on California Psychological Test - Good Impression Scale

	35 - 1	17 - 10
	34 - 0	16 - 7
	33 - 1	15 - 13
	32 - 1	14 - 9
	31 - 1	13 - 13
	30 - 2	12 - 8
	29 - 1	11 - 4
	28 - 4	10 - 6
	27 - 3	9 - 5
	26 - 1	8 - 3
	25 - 0	7 - 2
	24 - 6	6 - 1
	23 - 9	5 - 1
	22 - 8	4 - 4
	21 - 8	3 - 1
	20 - 10	2 - 0
	19 - 10	1 - 0
	18 - 7	
$\bar{X}$ = 16.24	S.D. = 5.55	N = 90

Table 16

Frequency Distribution of Scores on California Psychological Test - Communality Scale

28	30
27	52
26	31
25	15
24	18
23	6
22	2
21	2
20	0
19	0
18	1
17	1
16	16
15	0
14	1
13	0
12	0
11	0
10	0
...	0

$\overline{X}$ = 26.1 S.D. = 1.89 N = 90

Table 17

Frequency Distribution of Scores on California Psychological Test - Achievement via Conformance Scale

	52 - 1	25 - 13
	... - 0	24 - 14
	38 - 1	23 - 4
	37 - 3	22 - 6
	36 - 1	21 - 2
	35 - 2	20 - 2
	34 - 8	19 - 4
	33 - 9	18 - 2
	32 - 11	17 - 0
	31 - 17	16 - 1
	30 - 7	15 - 0
	29 - 12	14 - 3
	28 - 16	13 - 1
	27 - 11	12 - 0
	26 - 9	... - 0
$\bar{X}$ = 28.22	S.D. = 4.04	N = 90

Table 18

Frequency Distribution of Scores on California Psychological Test - Achievement via Independence Scale

	27 - 1	14 - 9
	26 - 6	13 - 6
	25 - 3	12 - 1
	24 - 5	11 - 2
	23 - 10	10 - 1
	22 - 21	9 - 0
	21 - 17	8 - 1
	20 - 12	7 - 0
	19 - 21	6 - 0
	18 - 10	5 - 0
	17 - 8	4 - 1
	16 - 13	... - 0
	15 - 11	
$\bar{X}$ = 20.72	S.D. = 4.12	N = 90

Table 19

Frequency Distribution of Scores on California Psychological Test - Intellectual Efficiency Scale

	56 - 1	36 - 11
	55 - 0	35 - 11
	54 - 0	34 - 10
	53 - 0	33 - 4
	52 - 0	32 - 6
	51 - 0	31 - 3
	50 - 0	30 - 3
	49 - 1	29 - 7
	48 - 0	28 - 5
	47 - 1	27 - 1
	46 - 2	26 - 1
	45 - 3	25 - 3
	44 - 7	24 - 1
	43 - 6	23 - 0
	42 - 12	22 - 0
	41 - 10	21 - 0
	40 - 11	... - 0
	39 - 11	13 - 1
	38 - 10	... - 0
	37 - 15	
$\bar{X}$ = 37.7	S.D. = 5.43	N = 90

Table 20

Frequency Distribution of Scores on California Psychological Test - Psychological Mindedness Scale

17	1
16	0
15	9
14	11
13	16
12	24
11	24
10	17
9	21
8	15
7	6
6	12
5	0
4	3
3	0
2	1
1	0

$\bar{X}$ = 11.37 S.D. = 2.42 N = 90

Table 21

Frequency Distribution of Scores on California Psychological Test - Flexibility Scale

19	1
18	1
17	3
16	3
15	10
14	14
13	7
12	12
11	15
10	20
9	13
8	22
7	11
6	8
5	7
4	6
3	3
2	1
1	3

$\overline{X}$ = 10.6 S.D. = 4.09 N = 90

Table 22

Frequency Distribution of Scores on California Psychological Test - Femininity Scale

	47 - 1	23 - 17
	... - 0	22 - 11
	36 - 1	21 - 11
	... - 0	20 - 14
	31 - 1	19 - 4
	30 - 3	18 - 4
	29 - 4	17 - 4
	28 - 15	16 - 0
	27 - 14	15 - 1
	26 - 15	14 - 1
	25 - 19	... - 0
	24 - 20	
$\bar{X}$ = 23.75	S.D. = .97	N = 90

Table 23

Frequency Distribution of Scores on Minnesota Teacher Attitude Inventory

102 - 1	70 - 1	48 - 0	26 - 0	4 - 3
... - 0	69 - 1	47 - 0	25 - 0	3 - 0
91 - 1	68 - 0	46 - 2	24 - 2	2 - 0
... - 0	67 - 0	45 - 3	23 - 0	1 - 1
88 - 0	66 - 1	44 - 0	22 - 2	0 - 1
87 - 1	65 - 2	43 - 0	21 - 0	-1 - 0
86 - 0	64 - 0	42 - 1	20 - 0	-2 - 0
85 - 0	63 - 1	41 - 1	19 - 1	-3 - 2
84 - 0	62 - 1	40 - 2	18 - 0	-4 - 0
83 - 1	61 - 4	39 - 2	17 - 0	-5 - 0
82 - 0	60 - 1	38 - 1	16 - 2	-6 - 0
81 - 0	59 - 1	37 - 1	15 - 3	-7 - 0
80 - 0	58 - 1	36 - 1	14 - 1	... - 0
79 - 0	57 - 0	35 - 2	13 - 0	-16 - 0
78 - 0	56 - 1	34 - 2	12 - 1	-17 - 2
77 - 0	55 - 1	33 - 4	11 - 0	-18 - 0
76 - 0	54 - 1	32 - 1	10 - 0	-19 - 2
75 - 0	53 - 1	31 - 3	9 - 1	-21 - 1
74 - 0	52 - 2	30 - 1	8 - 2	
73 - 1	51 - 1	29 - 0	7 - 0	
72 - 0	50 - 2	28 - 2	6 - 0	
71 - 1	49 - 0	27 - 2	5 - 0	

Table 23 (continued)

... - 0

-25 - 1

-26 - 0

-27 - 0

-28 - 1

-29 - 1

... - 0

-33 - 0

-34 - 1

... - 0

-37 - 1

... - 0

$\bar{X}$ = 33.0 S.D. = 29.85 N = 90

Table 24

Summary Data and Analysis of Variance for Minnesota Teacher Attitude Inventory and all Scales of California Psychological Inventory

	High Group	Medium Group	Low Group
N:	30	29	31
M:	62.20	35.50	-1.32
SD:	12.61	5.27	19.51

Source	SS Summary of Square	DF Degrees of Freedom	MS Mean Square	F Value	Critical level of Rejection
Treatments	62117.00	2	31058.50	159.098	.01<P>.05
Error	16788.60	86	195.22		
Total	78905.50	88			

Scheffes' Post-Hoc Comparison
Mean 1 is significantly greater than mean 2, &3.

Table 25

Summary Data and Analysis of Variance
for MTAI and Dominance Scale (CPI)

	High	Medium	Low
N:	30	29	31
M:	31.77	28.18	28.26
SD:	4.96	5.96	7.16

Source of Treatments	Sum of Squares	Degrees of Freedom	Mean Square	F Value	Critical level of Rejection
	250.21	2	125.11	3.3503	
Error	3211.41	86	37.34		.05<P>.1
Total	3461.62	88			

Scheffe's Post Hoc Comparison
F(.05) Value for 2 and 86 degrees freedom = 3.11

Mean 1 is significantly higher than Mean 2 & 3

TABLE 26

Summary Data and Analysis of Variance for MTAI and Capacity for status (CPI)

	High	Medium	Low
N:	30	29	31
M:	21.03	19.11	17.45
SD:	3.02	3.37	3.79

Source of	Sum of Squares	Degrees of Freedom	Mean Square	F Value	Critical level of Rejection
Treatments	195.80	2	97.90	8.3917	.01< P >.05
Error	1003.32	86	11.67		
Total	1199.12	88			

Scheffe's Post Hoc Comparison
F(.01) value for 2 and 86 degrees freedom = 4.83

Mean 1 is significantly greater than mean 3

TABLE 27

Summary Data and Analysis of Variance for MTAI and Sociability Scale of CPI

	High	Medium	Low
N:	30	29	31
M:	28.47	26.04	23.97
SD:	3.98	4.18	5.28

Source of	Sum of Squares	Degrees of Freedom	Mean Square	F. Value	Critical Level of Rejection
Treatments	308.99	2	154.49	7.5261	.01<P<.05
Error	1765.39	86	20.53		
Total	2074.38	88			

Scheffe's Post-Hoc Comparison
F(.01) value for 2 and 86 degrees of freedom = 4.83

Mean 1 is significantly greater than mean 3

TABLE 28

Summary Data and Analysis of Variance for MTAI and Social Presence Scale of CPI

	High	Medium	Low
N:	30	29	31
M:	39.97	37.64	33.84
SD:	4.82	4.82	5.29

Source of	Sum of Squares	Degrees of Freedom	Mean Square	F. Value	Critical Level of Rejection
Treatments	584.51	2	292.25	11.7361	$.0001 < P > .01$
Error	2141.59	86	24.90		
Total	2726.09	88			

Scheffe's Post Hoc Comparison
F (.01) value for 2 and 86 degrees of freedom = 4.83

Mean 1 is significantly greater than Mean 3
Mean 2 is significantly greater than Mean 3

TABLE 29

Summary Data and Analysis of Variance for MTAI and Self Acceptance Scale (CPI)

	High	Medium	Low
N:	30	29	31
M:	24.13	22.25	21.97
SD:	2.79	3.31	3.80

Source of	Sum of Squares	Degrees of Freedom	Mean Square	F. Value	Critical Level of Rejection
Treatments	83.26	2	41.63	3.754	
Error	953.68	86	11.09		.02656
Total	1036.95	88			

Scheffe Post Hoc Comparison
F(.05) Value for 2 and 86 Degrees of Freedom = 3.11

Mean 1 is significantly higher than Mean of 2, 3

TABLE 30

Summary Data and Analysis of Variance for MTAI and Sense of Well Being Scale (CPI)

	High	Medium	Low
N:	30	29	31
M:	37.17	35.79	33.68
SD:	3.55	4.96	4.76

Source of	Sum of Squares	Degrees of Freedom	Mean Square	F. Value	Critical Level of Rejection
Treatments	188.57	2	94.29	4.9392	
Error	1641.66	86	19.09		.01<P>.05
Total	1830	88			

Scheffe Post Hoc Comparison
F (.01) Value for 2 and 86 degrees of freedom = 4.83

Mean 1 is significantly greater than

TABLE 31

Summary Data and Analysis of Variance for MTAI and Responsibility Scale (CPI)

	High	Medium	Low
N:	30	29	31
M:	30.87	29.14	29.58
SD:	4.61	3.92	5.06

Source of	Sum of Squares	Degrees of Freedom	Mean Square	F. Value	Critical Level of Rejection
Treatments	47.20	2	23.60	1.1284	N.S.
Error	1798.45	8	20.91		
Total	1845.64	88			

Scheffe's Post Hoc Comparison
F(.05) Value for 2 and 86 degrees of freedom = 3.11

There is no significant difference between Mean of groups 1, 2 or 3.

TABLE 32

Summary Data and Analysis of Variance for MTAI and Socialization Scale (CPI)

	High	Medium	Low
N:	30	31	29
M:	38.97	39.29	38.96
SD:	4.87	4.34	4.92

Source of	Sum of Squares	Degrees of Freedom	Mean Square	F. Value	Critical Level of Rejection
Treatments	2.14	2	1.07	.048336	N.S.
Error	1904.31	86	22.14		
Total	1906.45	88			

Scheffe's Post Hoc Comparison
N.S. at F (.05) Value for 2 and 86 degrees of freedom = 3.11

Mean 1 is not significantly higher than Mean 2 and 3

TABLE 33

Summary Data and Analysis of Variance for MTAI and Self Control Scale (CPI)

	High	Medium	Low
N:	30	29	31
M:	29.00	29.25	27.42
SD:	6.71	5.71	6.11

Source of	Sum of Squares	Degrees of Freedom	Mean Square	F. Value	Critical Level of Rejection
Treatments	59.38	2	29.69	.77265	N.S.
Error	3304.80	86			
Total	3364.18	88			

Scheffe's Hoc Comparison
F(.05) Value for 2 and 86 degrees of freedom = 3.11

Mean 1 is not significantly greater than Means 2 & 3.

TABLE 34

Summary Data and Analysis of Variance for MTAI and Tolerance Scale

	High	Medium	Low
N:	30	29	31
M:	23.30	22.61	20.10
SD:	4.16	4.61	4.35

Source of	Sum of Squares	Degrees of Freedom	Mean Square	F. Value	Critical Level of Rejection
Treatments	173.21	2	86.61	4.5368	
Error	1641.69	86	19.09		.01<P>.05
Total	1814.90	88			

Scheffe's Post Hoc Comparison
F(.05) Value for 2 & 86 degrees of freedom = 3.11

Mean 1 is significantly higher than Mean 3

TABLE 35

Summary Data For Analysis of Variance for MTAI and Good Impression Scale (CPI)

	High	Medium	Low
N:	30	29	31
M:	17.83	16.57	14.42
SD:	6.31	5.43	6.02

Source of	Sum of Squares	Degrees of Freedom	Mean Square	F. Value	Critical Level of Rejection
Treatments	181.99	2	91.00	2.5754	N.S.
Errors	3038.57	86	35.33		
Total	3220.56	88			

Scheffe's Post Hoc Comparison
F(.05) value for 2 and 86 degrees of freedom is 2.57541

Mean 1 is not significantly higher than Mean 2 and 3.

TABLE 36

Summary Data of Analysis of Variance for MTAI and Commonality Scale (CPI)

	High	Medium	Low
N:	30	29	31
M:	26.37	25.71	26.29
SD:	1.69	2.35	1.57

Source of	Sum of Squares	Degrees of Freedom	Mean Square	F. Value	Critical Level of Rejection
Treatments	7.32	2	3.66	1.02455	N.S.
Errors	307.07	86	3.57		
Total	314.38	88			

Scheffe's Post Hoc Comparison
F(.05) Values for 2 and 86 degrees of freedom = 3.11

Mean 1 is not significantly higher than Mean 2, 3

TABLE 37

Summary Data and Analysis of Variance for MTAI and Achievement via Conformity Scale (CPI)

	High	Medium	Low
N:	30	29	31
M:	28.97	27.89	27.81
SD:	4.07	4.30	3.87

Source of	Sum of Squares	Degrees of Freedom	Mean Square	F. Value	Critical Level of Rejection
Treatments	25.02	2	12.51	.75325	N.S.
Error	1428.48	86	16.61		
Total	1453.51	88			

Scheffe Post Hoc Comparison
F Value (.)%) for 2 and 86 degrees of freedom = 3.11

Mean 1 is not significantly greater than mean 2 or 3.

TABLE 38

Summary of Data and Analysis of Variance for the MTAI and Achievement via Independence Scale (CPI)

	High	Medium	Low
N:	30	29	31
M:	22.80	21.32	18.16
SD:	5.60	3.26	3.51

Source of	Sum of Squares	Degrees of Freedom	Mean Square	F. Value	Critical Level of Rejection
Treatments	342.88	2	171.44	9.42037	$.01 < P > .05$
Errors	1565.10	86	18.20		
Total	1907.98	88			

Scheffe's Post Hoc Comparison
F(.01) value for 2 and 86 degrees of freed

Mean 1 is Significantly greater than Mean 3.

TABLE 39

Summary Data and Analysis of Variance for MTAI and Intelligence Efficiency (CPI)

	High	Medium	Low
N:	30	29	31
M:	39.20	38.71	35.29
SD:	6.10	4.40	5.91

Source of	Sum of Squares	Degrees of Freedom	Mean Square	F. Value	Critical Level of Rejection
Treatments	276.29	2	138.15	4.4783	
Errors	2652.90	86	30.85		$.05 < P > .10$
Total	2929.19	88			

Scheffe's Post Hoc Comparison
F(.05) for 2 and 86 degrees of freedom = 3.11

Mean 1 is significantly greater than mean 3

Summary data and Analysis of Variance for MTAI and Psychological Mindedness (CPI)

TABLE 40

	High	Medium	Low
N:	30	29	31
M:	11.20	11.75	10.23
SD:	1.86	2.37	3.05

Source of	Sum of Squares	Degrees of Freedom	Mean Square	F. Value	Critical Level of Rejection
Treatments	65.29	2	32.65	5.2829	
Error	531.47	46	6.18		.01<P>.05
Total	596.76	88			

Scheffe's Post Hoc Comparison
F(.01) value for 2 and 86 degrees of freedom = 4.83

Mean 1 is higher than mean 2 and 3

TABLE 41

Summary of Data and Analysis of Variance for MTAI and Flexability (CPI)

	High	Medium	Low
N:	30	29	31
M:	11.23	11.29	9.35
SD:	4.34	3.14	4.79

Source of	Sum of Squares	Degrees of Freedom	Mean Square	F. Value	Critical Level of Rejection
Treatments	73.26	2	36.63	2.0999	N.S.
Error	1500.18	86	17.44		
Total	1573.44	88			

Scheffe's Post Hoc Comparison
F(05) Values for 2 and 86 degrees of freedom = 3.11

Mean 1 is not significently higher than Mean 2 and 3

TABLE 42

Summary Data and Analysis of Variance for MTAI and Femininity Scale (CPI)

	High	Medium	Low
N:	30	29	31
M:	23.97	23.57	23.71
SD:	5.23	3.08	3.05

Source of	Sum of Squares	Degrees of Freedom	Mean Square	F. Value	Critical Level of Rejection
Treatments	2.35	2	1.18	.9308	
Error	1418.21	86	16.49		N.S.
Total	1420.56	88			

Scheffe's Post Hoc Comparison
F(.05) Value of 2 and 86 degrees of freedom = 3.11

Mean 1 is not significantly higher than Mean 2, 3.

Table 43

High Comparison of Scores in MTAI with Scores on Scales of California Inventory Psychological

Scale	Mean	S.D.	Level of Signifance
Dominance	31.77	4.96	.05
Status	21.03	3.02	.01
Sociability	28.47	3.98	.01
Social Presence	39.97	4.82	.0001
Social Acceptance	24.13	2.79	.05
Sense of Well Being	37.17	3.55	.01
Responsibility	30.87	4.61	NS
Socialization	38.97	4.87	.05
Self Control	29.00	6.71	NS
Tolerance	23.30	4.16	.05
*Good Impression	17.83	6.31	NS
* Communality	26.37	1.69	NS
* Achievement via Conformity	28.97	4.07	.05
" via Independence	22.80	5.06	.01
Intellectual Efficiency	39.20	6.10	.05
Psychological Mindedness	12.20	1.86	.01
Flexibility	11.23	4.34	NS
* Femininity	23.97	5.23	NS
All Scales	62.20	12.62	.01

*These scales were not used